

AMENDMENT TO THE ABSTRACT

Please replace the abstract with the following:

Abstract of Disclosure

A hydrogen fueled reciprocating spark ignition engine includes a fuel system for providing gaseous hydrogen to the cylinders of the engine and a lean NOx trap coupled to the engine for treating the engine's exhaust. A controller determines when to purge the lean NOx trap and provides gaseous hydrogen to the lean NOx trap during purging by operating the engine fuel rich or injecting hydrogen upstream of the lean NOx trap. An EGR system provides recirculated exhaust gas to the engine, and a controller operates the fuel system and EGR system during periodic purging of the lean NOx trap such that the engine is operated fuel rich, with the mass of EGR approximating 40% to 80% of the mass of air and fuel.